A

TREATISE

ON THE

Synochus Icteroides,

OR

YELLOW FEVER;

AS IT LATELY APPEARED IN THE

CITY OF PHILADELPHIA.

EXHIBITING

A CONCISE VIEW OF ITS RISE, PROGRESS AND SYMPTOMS, TOGETHER WITH THE METHOD OF TREATMENT FOUND MOST SUCCESSFUL;

ALSO

REMARKS ON THE NATURE OF ITS CONTAGION, AND DIRECTIONS FOR PREVENTING THE INTRODUCTION OF THE SAME MALADY, IN FUTURE.

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M,DCC,XCIV.

HIS EXCELLENCY

THOMAS MIFFLIN,

Governor of Pennſylvania.

SIR,

NOT the ſplendor of your ſtation, but the qualities of your heart, ſo conſpicuouſly diſplayed during the prevalence of the late deſtructive malady in this city, induce me to inſcribe the following treatiſe

treatice to your excellency. You are therefore requeſted to accept it; not as a compliment, but as a tribute to which you are juſtly entitled, from

Your moſt ſincere,

And very humble ſervant,

THE AUTHOR.

PHILADELPHIA,
January 20th 1794.

PREFACE.

As every invention, diſcovery, or improvement, is more or leſs uſeful and intereſting, in proportion as it contributes to the preſervation of health, life, proſperity, and ſatisfaction; and as the author of the following pages is perſuaded, that very material improvements were made in the treatment of the ſynochus icteroides or yellow fever, which lately prevailed in this city, and proved ſo deſtructive and diſtreſſing to its inhabitants, he thinks it his duty to lay the ſame before the public, together with his obſervations and ſentiments on other circumſtances, relative to that diſeaſe; that if it ſhould ever appear here again (as there is too much rea-

ſon

ſon to apprehend, unleſs much caution is obſerved to prevent it, from our conſtant intercourſe with the Weſt Indies, where ſtrangers are ſeldom long exempt from it) phyſicians may not again be at a loſs for a directory, derived from actual experience and obſervation. He however does not pretend to have been the improver of the treatment, or the diſcoverer of the means moſt effectual in the cure, which is recommended in the following pages. On the contrary, he believes they were adopted from the joint deliberations of the college of phyſicians, in conſequence of ſome of its members having obſerved their good effects when the diſeaſe firſt appeared, and was miſtaken for a *higher grade* of the bilious remittent fever of the autumnal ſeaſon. Inſtead of attending to ſyſtematic arrangement in the following little production, he has contented himſelf with enumerating ſymptoms and circumſtances as they occurred to him, while engaged in practice; and offering his ſentiments in the order in which they happened to ariſe.

By

By this method he hopes to eſcape the imputation of pedantry: and though thoſe who prefer the ſtudied and formal arrangement of the ſchools, to the ſimplicity and order of nature, may condemn his manner, he hopes the matter it contains, and the importance of the ſubject, will ſecure him the approbation of all thoſe who prefer utility to formality and faſhion. To men of taſte indeed, ſome apology is due for the imperfections of its ſtyle and compoſition; but if want of leiſure and frequent interruption are ever admitted as an apology for a treſpaſs of this nature, he is certainly entitled to ſome indulgence on the preſent occaſion; eſpecially as he can aſſure them, that truth has been his aim, his end the public good.

January 24th, 1794.

A

SKETCH

OF THE

RISE AND PROGRESS

OF THE

DISEASE.

THE diſeaſe which we are about to deſcribe, made its firſt appearance in Water ſtreet between Mulberry and Saſſafras ſtreets, the beginning of Auguſt 1793, and appears to have been imported by a veſſel which arrived in this port, and lay at a wharf in that neighbourhood the latter end of July.*

* See Mr M. Carey's account of the riſe and progreſs of the diſeaſe, lately publiſhed.

From this ſource it ſpread gradually by contagion over the greateſt part of the city; and was more or leſs rapid in its progreſs, according as people had more or leſs intercourſe with the ſick, and according as the weather was more or leſs cold: for though it was propagated by contagion, the ſenſible qualities of the atmoſphere had a ſurpriſing effect in rendering the contagion more or leſs active, as well as in its influence on the ſymptoms of thoſe labouring under the diſeaſe.

The greateſt number confined with the diſeaſe, was about the middle of October; but as the weather became cold and froſty, its declenſion was ſo rapid that it appeared as if extinguiſhed by a miracle: for by the tenth of November, there was ſcarcely a perſon to be found with it.

The whole number that died of this diſeaſe in the city, appears from the regiſters of deaths kept by the different religious ſocieties, to have been

been about 3500. In the regiſters of the deaths which have been kept by thoſe ſocieties, there is no diſcrimination made between thoſe who died of the yellow fever and of other diſeaſes; and the whole number of deaths appears to have been 4048, from the 1ſt of Auguſt to the 10th of November; of which above 500 are ſuppoſed to have died of other diſeaſes. At one period there appears to have been more than eight thouſand perſons confined by it at the ſame time; though at that time near twenty thouſand of the inhabitants had retired from the city.

That the long continuance of heat and drought which preceded this diſeaſe had no ſhare in its generation, is certain, from its being confined for ſome time to that part of the city where it commenced: for almoſt every caſe which occurred for the firſt week or two, could be traced to that ſource, and was propagated to others in ſucceſſion.

This fever correſponded in moſt of its leading and characteriſtic ſymptoms, with the ſynochus icteroides occidentalis, or yellow fever of the Weſt Indies. A fever of the ſame kind has prevailed here three times before, viz. in the years 1740, 1747 and 1762.

In the year 1740, it was introduced by means of a trunk of wearing apparel, which had belonged to a gentleman who died of it in Barbadoes. The family to whom the trunk was ſent firſt took the diſeaſe; and from them it ſpread into the town, and deſtroyed above two hundred people; as we are informed by the celebrated LIND, in his treatiſe on fevers and infection.

The only account I have been able to obtain reſpecting its appearance in 1747, is what is contained in Mr Lardner's letter, of which the following is a copy.

PHILA-

PHILADELPHIA, *Sept.* 3*d*, 1747. *(O. S.)*

" SINCE my laſt, a contagious fever has raged amongſt us, which admits of no relief, cure, or abatement; never intermitting to the laſt moment of life. It has carried off three of my moſt intimate acquaintance; among which are my dear friends Andrew Hamilton and Mr Currie. Philadelphia has been a melancholy place, and many whoſe buſineſs and family would permit them, have fled the city. But the air is now become much cooler, and thoſe under the diſorder revive. The ſymptoms (a pain in the head and back, vomiting, &c.) are leſs violent, and the fever gradually abates. Meſſrs. Allen and Turner's family are yet under the diſeaſe; the one having loſt a near relation, and Mr Allen himſelf not out of danger.

" September 24th. The yellow fever is ſtill amongſt us: yeſterday was buried young Samuel Powell who died of it."

It

It is aſtoniſhing that the phyſicians of that time left nothing on record reſpecting ſo deſtructive a malady. Perhaps if the notes of Doctors Zachary, Graham, Kearſley, and Cadwallader were inſpected, ſome important facts might yet be diſcovered. Dr Griffiths' mother who had the diſeaſe at that time is ſtill alive.

The third time of its appearance it was introduced (according to the notes of Dr Redman of this city) about the latter end of Auguſt, by a mariner from the Havanna: it came to its height about the 25th of September, and from that time gradually declined, and was entirely extinguiſhed by the middle of October. Neither the ſtate of the weather, nor the number of deaths which occurred at that time, are known, no regiſter having been preſerved.

The fever at that time was circumſcribed to Pine or Union ſtreet Northerly, and three or four ſquares from thence Southerly, and extended

extended from Water ſtreet, to Third or Fourth ſtreet Weſterly. Its firſt and greateſt ravages were about the New Market, which lay near the ſource where the diſeaſe originated. It ſpread at that time, as the one we are about to deſcribe did, from family to family, as they happened to have intercourſe one with another.

A fever of the ſame kind, alſo prevailed at Charleſton, South Carolina, in the years 1732, 1739, 1745 and 1748; an account of which has been given by Dr. Lining, and publiſhed in the ſecond Vol. Phyſical and Literary Eſſays of Edinburgh. The diſeaſe each time that it prevailed in Carolina, was traced to ſome perſon lately arrived from ſome of the Weſt India Iſlands.

We are alſo informed by Dr Lind, in his treatiſe on hot climates, that a ſimilar diſeaſe occurred in Cadiz, in Spain, the latter end of the ſummer of 1764, of which an hundred perſons

perſons ſometimes died in a day; that its ravages were at that time entirely confined to that city, and that thoſe who retired to the country eſcaped it.

Though the diſeaſe we are about to deſcribe was highly contagious, the influence of the contagion was circumſcribed to a narrow ſphere, for none but thoſe who approached near to the ſick, or to ſuch articles as had been in contact with them, or within the ſphere of their effluvia ſo as to be impregnated thereby were affected.

All that ſhut themſelves up in their houſes, retired into the country, or avoided entering into infected houſes, and all intercourſe with the ſick, or infected ſubſtances, or with thoſe who viſited the ſick (for the idle curioſity of ſervants, particularly of the hired girls, was the means of propagating the diſeaſe more than any other circumſtance), though conſtantly abroad in the open ſtreets, eſcaped the

diſeaſe

diſeaſe without exception. The priſoners in the jail and work houſe—the penſioners in the poor houſe, and the patients and attendants at the hoſpital, from whence all intercourſe with the infected was excluded, alſo entirely eſcaped the diſeaſe.

There was ſomething however, in the ſtate of the atmoſphere in the city, or in the conſtitutions of the inhabitants, peculiarly favourable to the operation of the contagion, very different from that of the country; for when any perſon with the diſeaſe was removed a few miles into the country, and even died of it, there is ſcarce an inſtance of its having been communicated to any perſon in the ſame houſe, whereas when any one in a family took it and remained in the city, others, and ſometimes the whole of the family, ſoon after took the diſeaſe*.

Thoſe

* This was alſo the caſe the laſt time it occurred at Charleſton, as recorded by Dr. Lining—and alſo at Cadiz in 1764, mentioned by Lind.

Thoſe expoſed to the contagion generally began to be affected between the third and eighth day; we recollect ſeveral that were certainly attacked on the fifth day, one on the third, and two not till the tenth day after expoſure. Theſe were aſcertained by ſuch circumſtances, as could not have deceived us. Thoſe who had retired into the country, and again returned to the city during the prevalence of the diſeaſe, were affected more readily and earlier than others, after ſuch expoſure.

The ſtate of the mind ſeems to have had great influence, in haſtening or retarding the effects of the contagion; thoſe under the influence of fear, which was the caſe with the majority, were ſooner affected after expoſure to the contagion, than thoſe who were leſs concerned. Every other debilitating power had a ſimilar affect, ſuch as an abſtemious regimen, too much fatigue, frequent purging, blood-letting, and expoſure to the night air, without

without exercise sufficient to keep up a vigorous circulation. But a lax state of the bowels, and a moderate tone of the solids, appear to have contributed to render the disease more mild when it did attack those who were not greatly under the influence of terror. Neither age nor sex were exempt, not even infants at the breast—but those that were fat, corpulent and indolent, were most susceptible of the contagion, and suffered accordingly.

While this formidable disease was making such ravages in the city, the country for some miles around was never more healthy, especially in dry and elevated situations. In the low and marshy grounds, indeed, this was not the case; for at Harrisburgh on the Susquehanna, at Dover on the Delaware, and a few other places, bordering on rivers or large creeks, whose channels were almost exhausted of their waters, by the long continuance of heat and drought, bilious fever, choleras, dysenteries and cholics, were never known to be so prevalent and mortal.

The

. The French Weſt Indians, particularly thoſe from St. Domingo, who had taken ſhelter here, from the ſtorms of a ſanguinary war, almoſt to a man eſcaped the diſeaſe, though they made no uſe of any precaution for the purpoſe; while thoſe from France were as liable to it as the Philadelphians.

The reaſon that the Weſt Indians were not liable to it, is perhaps owing to the reſemblance of the ſeaſon to that of the climate from whence they came; and to the effects produced by the frequent excretions of bile to which they are particularly ſubject, rendering the duodenum and biliary ducts inſenſible to the poiſon. For it is a ſingular though a notorious fact, that the diſeaſe ſeldom or ever affects any but ſtrangers or new comers from a colder or more temperate climate, in the Weſt Indies; as we are informed by almoſt all the writers on the ſubject. But we were ſtrangers or new comers to it to all intents and purpoſes, with this difference, that it was brought to us inſtead of our

and

being taken to it; and for that reaſon were ſubject to its influence. There are however ſome inſtances mentioned by Hillary of its being communicated by contagion at Barbadoes, and of a few Creoles being affected by it. But this he ſays was very rare, and after the diſeaſe had become very malignant.

* The negroes that were natives of America

* The lateſt writer on this ſubject, Dr Jackſon, informs us that no negro immediately from the coaſt of Africa has been known to be attacked by this diſeaſe; neither have Creoles that have reſided conſtantly in the Iſlands. Yet Creoles or Africans who have been abſent a conſiderable time, and reſided in colder climates, whether in Europe or the higher latitudes of America, are not by any means exempted from it when they return to the Iſlands. Europeans, particularly males, ſuffer from it ſoon after their arrival in the Iſlands; but in general, after reſiding there a year or two, they are very rarely attacked by it. Nor has it ſcarcely ever been known to attack the ſame perſon twice, except accidentally, after his return from a different and colder climate. The remitting fever, on the contrary, attacks perſons of all deſcriptions, whether natives or foreigners. Nor are thoſe who have once had it exempt from its future attack: a fact which proves

ca were alſo liable to it, though not in the ſame proportion as the whites. This was not the caſe, according to the obſervations of Dr Lining, when it prevailed in Charleſton; for at that time there was not an inſtance of any negro being affected by it, though as much expoſed to the contagion as the whites. This with ſome exceptions, is alſo the caſe with reſpect to the negroes in the Weſt Indies; tho' Dr. Blane ſays he ſaw a black woman die with all the ſymptoms of it at Barbadoes, having caught it from nurſing ſome ſeamen that were ill of it. The ſame author is of opinion, that the diſeaſe cannot be generated in any place,

proves that there actually exiſts ſome eſſential difference between the two diſeaſes; or at leaſt it ſhews, that the revolution of a ſeaſon or two deſtroys in the conſtitutions of foreigners, a certain aptitude or diſpoſition for the one diſeaſe, which it ſtill retains for the other. Perhaps this may be principally owing to the effects produced on the biliary ducts and duodenum, by the frequent and copious ſecretion of bile, to which the inhabitants of Tropical climates are particularly ſubject; whereby they are rendered inſenſible to the contagion of this diſeaſe.

place, unleſs the heat has been for ſome time above 75 degrees. It is aſſerted by Dr Lining, that thoſe who have once had the diſeaſe, cannot take it a ſecond time: but we have ſeen ſeveral inſtances of its occurring a ſecond time here, where the circumſtances were ſo unequivocal, that it could not be fairly aſcribed to a relapſe.

As ſoon as the contagion had reached the central part of the city, the diſeaſe ſpread with aſtoniſhing rapidity. In the courſe of Auguſt, there were more than 300 funerals; towards the cloſe of the month, twenty were buried of a day. During the greateſt part of this month, the mercury in the thermometer ranged from 80 to 90°, in the afternoons; the ſky generally clear, and the winds Weſterly. From the 25th to the end of the month the weather was cloudy, and a ſmall quantity of rain fell.

In September, the diſeaſe increaſed amazingly.

zingly. In the courſe of the month, about 1400 citizens were added to the liſt of mortality; towards its cloſe, from 50 to 90 were buried of a day, though the mercury now ſeldom roſe above 80°. The weather was moſtly fair; a few days were cloudy, but there was no rain. The wind ſtill weſterly. Throughout the month the heat was generally moderate, and the weather uniform, except from the 19th to the 23d, when it was unuſually calm, "deprived of the refreſhing breeze," during which the mortality was greater than at any other period in that month.

From this time to the middle of October, the diſeaſe proceeded with an increaſe of mortality, owing to the enlargement of the circle of contagion. From the 1ſt to the 17th, more than 1400 fell victims to the malady—but from the 17th, to the 1ſt of November, the bills of mortality leſſened rapidly, though not regularly. The whole number of the deaths in this month, amounted to near 2000,

though one third of the inhabitants had for ſome time before deſerted the city, and retired into different parts of the country, as choice or chance directed.

The thermometer was very variable all this month, generally below 80°, but above 50° until the 27th, from which time to the end of the month, it was always below 50°, and one day below 40°. The weather for the moſt part fair, though ſome rain fell on the 12th and 31ſt, and it was cloudy from the 25th to the end of the month. The wind generally from the N. and N. W. till the latter end of the month, but from that time N. N. E. Towards the laſt of the month, the contagion declined apace, the funerals being reduced to between 12 and 20 a day. From this time the weather became more wet, cold and froſty, and the diſeaſe declined ſo rapidly, that on the 9th of November, the funerals in all the grave yards only amounted to ſix. From this time every thing ſeemed to

ſink into that kind of placid calm, which generally ſucceeds a dying ſtorm. The citizens who had retreated from the danger, now ventured back, and the ſtreets and various departments of buſineſs, immediately reſumed their former life and energy—commerce again ſpread her white wings, and penſive mourning melancholy, has ſince given place to the cheerful face of joy.

DEFI-

DEFINITION.

The SYNOCHUS ICTEROIDES or YELLOW FEVER, derives its name from the inflammatory ſymptoms, with which it begins, becoming putrid in its progreſs; and from the yellowneſs in the eyes and ſkin, with which it is generally accompanied.

DESCRIPTION

OF

SYMPTOMS.

THE diſeaſe (whoſe ſymptoms are now to be delineated), was generally preceded by a ſlight indiſpoſition, ſuch as muſcular debility, and ſenſe of laſſitude, on exerciſe or motion, drowſineſs, ſlight pain and giddineſs in the head, pain in the back and loins, defec-

tive appetite, dyſpeptic ſymptoms, ſuch as flatulent eructations, loſs of appetite, &c. After this prelude, which ſeldom continued more than 6 or 8 hours, and ſometimes without any ſuch prelude at all, a chilly fit, alternated with glowing fluſhes of heat, came on, generally in the after part of the night, or fore part of the day; which, after a duration, for the moſt part ſhort, though ſometimes of 12 or 14 hours continuance, gave place to thoſe ſymptoms which deſignate a confirmed fever of the inflammatory type, which increaſed in violence as the day advanced; and continued with little or no variation, till towards morning, when ſome alleviation with reſpect to violence was generally obſervable, but in ſcarcely any inſtance was there ſo much abatement as could be properly called a remiſſion.

The pulſe, after the feveriſh ſtate became eſtabliſhed, was generally quick and tenſe, and during the exacerbation, it was alſo full and

and ſtrong. In the carotid and temporal arteries in particular, it was ſtrong and throbbing; reſpiration hurried; the ſkin very hot and dry; and the face highly fluſhed; the eyes remarkably red, hot, and painful, as if irritated by ſmall grit or ſand; accompanied with a torturing pain in the head, back, loins, and large joints, ſhooting from temple to temple, and extending from the loins to the hips and down the thighs; the thirſt conſiderable, but not inſatiable; the tongue white, moiſt, and clammy; the bowels either coſtive, or diſcharging thin, watery, and ſometimes bloody, ſtools; the urine high-coloured, cloudy, and ſmall in quantity; the ſtomach diſtended, painful, tender, and irritable, eſpecially after taking any kind of drink or aliment; frequently affected with ſick qualms, and more or leſs propenſity to puke, but ſeldom bringing up any thing; a ſenſe of ſtricture and oppreſſion at the precordia, as if tight bound with a belt; great reſtleſſneſs, with moaning and ſighing; and frequently ſhifting of poſture in ſearch of eaſe;

ſome

ſome confuſion of the intellects, attended with conſtant pervigilium; but ſeldom ſo much derangement of the reaſoning faculty as to amount to violent delirium; frequent hemorrhages from one or both noſtrils, during the afternoon exacerbations in young perſons of both ſexes; and in thoſe of one of the ſexes at two different periods of life. In ſome the head was moſt affected; in others the ſtomach. In perſons under puberty, ſymptoms of hydrocephalus internus frequently occured in the courſe of this ſtage. In men verging on old age, the diſeaſe uſually began with ſymptoms reſembling apoplexy, unleſs prevented by a diſcharge of blood from the hemorrhoidal veſſels.

When ſtools were procured by art, the firſt were generally ſoft and white, but ſeldom bilious. The contents thrown out from the ſtomach were generally the drinks or aliment laſt received. Sometimes mixed with matter of a ſea-green colour and bitter taſte, but often

ten without either. The ſuffuſion and inflamed appearance of the eyes, conſtantly increaſed in proportion to the violence of fever and date of the diſeaſe.

The preceding ſymptoms which may be conſidered as limiting the firſt ſtage of the diſeaſe, continued with more or leſs violence from one to three days, and ſometimes longer; and then abated ſuddenly, ſucceeded ſoon after by the appearance of a yellow tinge in the eyes, face, and neck, or by a copious evacuation of bilious matter by ſtool; and the patient ſpeedily recovered, except that his ſtomach remained weak, and his appetite defective for ſome time: or no bilious ſtools taking place at the time, or ſoon after the icteroitous appearance became obſervable, the diſeaſe proceeded to the ſecond ſtage, in which there was a diminution of force in ſome of the ſymptoms; an increaſe in others; and an acceſſion of new ones. The inflammatory ſymptoms which before, in many reſpects reſembled thoſe of the *idiopathic gaſtritis*,

tritis, now became mixed more or leſs with ſymptoms of nervous affection. The pulſe though ſtill quick, was no longer full or tenſe; the reſpiration alſo continued quick and hurried; and the ſkin, though leſs hot, was more dry and parched, except during the act of vomiting, and then the moiſture was only partial, chiefly about the neck and forehead. The tongue now appeared more dry and foul, particularly in the middle; the thirſt became inſatiable; the ſtomach ſo irritable, and the reaching and propenſity to puke ſo conſtant, that nothing could be retained on it, but was caſt up the inſtant it was ſwallowed, accompanied with violent ſtraining and noiſe; but the matter thrown up appeared very little if any changed in appearance, except being mixed with mucus and more ropy than when drank: the ſtomach was alſo conſtantly affected with a conſtant burning heat, which occaſioned the moſt excruciating agony and diſtreſs. The anxiety at the precordia alſo hourly increaſed, and ſoon became inſupportable torture: the ſighing, reſtleſtneſs,

leſſneſs, and toſſing to and fro became perpetual; the eyes and countenance were expreſſive of the deepeſt anguiſh and deſpair; and a delirium reſembling mania was by no means uncommon. As theſe ſymptoms became more diſtreſſing, the yellowneſs which before was faint and partial, aſſumed a deep orange or ſaffron colour, and extended itſelf over the whole ſurface of the body; ſo that the patient reſembled one with an obſtinate and inveterate jaundice. When theſe ſymptoms had continued with increaſing violence to the end of the ſecond, or beginning of the third, day, ſometimes earlier, and ſometimes later, they all ſuddenly vaniſhed, and left the patient for a time perfectly eaſy and tranquil. But this falacious truce, ſo flattering to the inexperienced, as well as to the patient, was ſoon ſucceeded by a different, and though leſs acutely painful, more hopeleſs and deſperate train of ſymptoms, which marked the third and laſt ſtage of this domeſtic tragedy. The whole ſurface of the body now became of a cadaverous cold-

neſs,

neſs, with the pulſe ſlow and ſoft, in ſome not exceeding 40 ſtrokes in a minute, but as regular as in health. The reſpiration was ſlow and deep; and the yellowneſs of the eyes and ſkin appeared of a deep tawny or dull copper-colour; the tongue much cleaner and moiſter than in either of the former ſtages; the vomiting was alſo leſs frequent, but in a much larger quantity when it did occur; and the patient always had ſome reſpite after emptying his ſtomach, till a large quantity of fluid was again accumulated; when it was again ſpouted up in an enormous quantity, and generally of a dark colour and turbid conſiſtence, reſembling coffee-grounds; and when ſtools occurred at this time, they generally had the ſame appearance; but ſometimes reſembled tar or molaſſes. The patient was generally at this time affected with a kind of cheerful delirium, imagining himſelf well: he could ſeldom be retained in bed, but walked about till exhauſted with fatigue. The delirium was generally ſucceeded, the day following, or the day after,

by

by coma, from which the patient was occaſionally rouſed by vomiting and uneaſy dreams; and when rouſed, ſtarted up, and attempted to get out of bed; and when prevented, immediately ſunk down again into a ſtate of ſlumbering inſenſibility; and if aſked, when rouſed from his coma, how he did, his conſtant reply was "very well!" As the debility increaſed, the face and breaſt became ſpotted, as if ſprinkled with ink; and a deep duſky yellow and purple colour, reſembling blood ſettled in a bruiſed part, pervaded the whole ſurface of the body. The reſpiration now became deep and ſlow, frequently interrupted by a ſobbing kind of ſighing and conſtant hiccup. Theſe were ſucceeded by dimneſs of viſion—difficulty of ſwallowing—loſs of ſpeech—rattling in the throat—ſhort and convulſive breathing—ſunk and irregular pulſe—cold ſweats—and finally death.

But in more protracted and leſs violent caſes, inſtead of the black vomiting and coma,

ma, the patient frequently became affected with ſymptoms reſembling thoſe which are commonly met with in a protracted and inveterate ſcurvy: In theſe the countenance appeared bloated and livid, as well as yellow, and blood perpetually oozed from different parts of the body; particularly from the noſe, gums, and hemorrhoidal veſſels. Some had apthæ or ſuperficial ulcerations, in the roof of the mouth, and in the throat, and parts which had been bliſtered; and ſome had a frequent vomiting, or rather gulping up of dark grumous blood from the fauces and ſtomach, or a diſcharge of it by ſtool. Several in this ſituation, lived many days without any other morbid appearance, except a conſtant and diſtreſſing watchfulneſs; ſitting up or walking about conſtantly, but without any appetite or extraordinary thirſt, or apparent delirium; till, exhauſted by a ſudden hemorrhagic diſcharge, or by a more gradual drain of blood, they ſunk inſenſibly into the arms of death, without a ſtruggle or a groan.

When

When the diſeaſe terminated favourably, it was generally before the fifth day, frequently on the ſecond or third; and when it terminated fatally, it was generally on the fourth, fifth, or ſixth day; ſometimes earlier and ſometimes later; but when the patient ſurvived the ſeventh day, without the acceſſion of the black vomiting, coma, or ſcorbutic ſymptoms, or great and increaſing debility, the diſeaſe generally terminated favourably.

This was the moſt uſual appearance and progreſs of this formidable and too often fatal diſeaſe, through its ſeveral ſtages. But there were very ſurpriſing variations in the appearance it aſſumed, both in reſpect to the duration of the ſeveral ſtages, and the ſtate of the ſymptoms, according to the particular conſtitutions and temperaments of different patients, the ſtate of the weather, the manner of treatment, &c.

A ſketch of theſe we ſhall now proceed to enume-

enumerate. In ſome caſes ſigns of debility in all the functions, and a putreſcent tendency in the whole ſyſtem, were apparent at a very early period of the diſeaſe. In theſe caſes the anxiety at the precordia was conſtant, the ſighing frequent—the yellowneſs of the eyes and ſkin became conſpicuous very early—the exacerbations and remiſſions of fever ſcarcely perceptible—the pulſe quick and weak, ſkin dry and parched, reſtleſſneſs and pervigilium great, vomiting conſtant, and on the ſecond or third day of a black colour—the ſtools alſo black and gelatinous—the ſtomach conſtantly affected with a violent cardialgia, or a burning heat, which the miſerable ſufferer ſaid felt as if ſcalded or burnt by a coal of fire; no poſture gave eaſe, and whatever was ſwallowed, except very ſmall draughts of toaſt and water, weak barley water, or ſimple ſpring water, increaſed the agony to the moſt exquiſite torture. It was in this form of the diſeaſe, that the method publiſhed by Dr Kuhn, particularly applied. And it was the form

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in which the diſeaſe moſt frequently appeared all the month of Auguſt.

In other caſes the generality of the ſymptoms reſembled thoſe of the autumnal remittent, combined with jaundice—and in ſome no yellowneſs or black vomiting occurred at all; but in theſe the eyes were almoſt always highly inflamed for a day or two, but when a diarrhœa, accompanied with a diſcharge of bile ſpontaneouſly occurred, or was procured by purgatives or gliſters, the yellowneſs or icteroitous appearance was frequently prevented.

It was often difficult to diſtinguiſh this diſeaſe at the beginning from the influenza, which was prevalent in the city, and ſpread over all the Southern ſtates and over the Weſtern territory, before the yellow fever had made much progreſs in the city. The influence of terror alſo occaſioned great variation in its ſymptoms. That the uſual diſeaſe of the ſeaſon,

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the remitting fever, was often blended with this diſeaſe, is by no means improbable. For though two epidemics ariſing from a change or alteration in the ſenſible qualities of the air, or from any inviſible miaſma diffuſed abroad to a conſiderable extent in the atmoſphere, cannot exiſt together, yet there s nothing more certain than that a contagious diſeaſe, and a diſeaſe depending on climate, ſeaſon, and ſoil, may exiſt at the ſame time and in the ſame place. Of this we have ſeveral examples in the works of Lind, Ruſſel, &c.

A preternatural diſcharge of bile, was by no means a common circumſtance in any form or at any period of the diſeaſe, as has been already obſerved. Diſſections made not only at Cadiz and the Weſt Indies, but alſo in this city, demonſtrate that this is owing to an inflammatory affection of the ſtomach, duodenum and ductus choledochus: And it is more than probable, that the black matter brought up by vomiting, was the ſphacelated ſurface of thoſe parts mixed with coagulated blood,

blood, bile, and the contents laſt taken into the ſtomach. The white colour of the ſtools ſo common in the beginning of the diſeaſe, alſo indicated an obſtruction to the excretion of bile. When the fever was protracted, accumulations of bile frequently took place, as was evident from the tenſion of the right hypochondrium, and the fœtid and copious diſcharges coloured with that fluid, which frequently appeared after an active purge.

Dr. Jackſon relates that while he reſided in Jamaica, between the years 1774 and 1782, he opened ſeveral perſons who died of this diſeaſe, and obſerved that the ſtomach and inteſtines had a dirty yellow appearance, and were highly putrefied, and much diſtended with wind—the liver and ſpleen generally enlarged in ſize, and the colour of the liver often of a deeper yellow than any other part of the abdominal viſcera—the gall bladder for the moſt part moderately full, and of a thick conſiſtence and black colour—the bilia-

ry ducts enlarged and filled with a ſimilar fluid, while the veſſels of the liver bore the marks of uncommon diſtention. A dark coloured turbid fluid was always obſervable in the cavity of the ſtomach, ſimilar to that uſually thrown up in the laſt ſtage of the illneſs; and the villous coat of that organ was alſo abraded in various places, and at the ſame time, ſpots were obſerved on different parts of its ſurface, which appeared to be incipient mortifications. The ſuperior portions of the inteſtinal canal, had alſo frequently a ſimilar appearance. From theſe and other diſſections, much light has been thrown upon the ſeat, and nature of this diſeaſe.*

* See Jackſon on the fevers of Jamaica, p. 265.

PROG-

PROGNOSIS.

IN THE FIRST STAGE.

The favourable Signs were,

HEMORRHAGES from the noſe, with relief of the head during the exacerbations. A gradual reduction of the pulſe, heat, and oppreſſion at the precordia. A diarrhœa or laxative ſtools, mixed with bile coming on before the third day.

When in the decline of this ſtage, there was a conſtant retching to vomit, without bringing up any thing or vomiting the drinks only, accompanied with a burning heat and tenderneſs at the ſtomach, with pain or oppreſſion; it was almoſt a certain indication that the yellowneſs, or bilious effuſion, would

ſoon make its appearance. When the alleviation of the ſymptoms, eſpecially of the oppreſſion and weight at the precordia or epigaſtric region took place, and were accompanied with, or ſucceeded by, a bilious diarrhœa, it always afforded a favourable prognoſtic.

Unfavourable Signs.

STRONG, hard, and quick pulſe, with ferocious delirium, and pervigilium; or quick, ſmall and irregular pulſe, with low delirium, great muſcular debility, exquiſite pain at the ſtomach, oppreſſion and ſenſe of ſtricture at the precordia, great thirſt, conſtant nauſea and retching, and reſtleneſs; obſtinate coſtiveneſs, and the ſtools when procured of a ſoft conſiſtence, in lumps, and of a whitiſh colour. A want of action in the bowels, and great inſenſibility to purges and glyſters, alſo gave room for much apprehenſion.

IN

IN THE SECOND STAGE.

The favourable Signs were,

AN abatement of the vomiting, anxiety and oppreſſion at the precordia—relief from the burning pain at the ſtomach—natural heat in the forehead and limbs, open bowels and natural coloured ſtools—turbid urine, &c.

Unfavourable Signs.

AN increaſe of muſcular debility, oppreſſion, anxiety, inceſſant vomiting, a rapid increaſe of the icteroitous aſpect, reſtleſſneſs and frequent ſighing, coſtiveneſs or bloody ſtools, accompanied with a painful teneſmus; hollow eyes, ſhrunk countenance, and ſhrill feeble voice; an obſtinate and painful pervigilium; the

the patient continuing wide awake, in a ſtate of the moſt uneaſy agitation, with his ſenſes and reaſon but little impaired. But the ſymptoms expreſſive of the greateſt danger were, an invincible irritability of the ſtomach, which prevented it from retaining any kind of drink, aliment, or medicines, and a gradual receſſion of heat from the ſurface of the body.

IN THE THIRD STAGE.

Favourable Signs.

A GRADUAL return of heat to the ſurface of the body, ceſſation of delirium, and change of colour in the matter vomited up.

Unfa-

Unfavourable Signs.

ALMOST all the ſymptoms in this ſtage indicated a fatal event, particularly the ſudden ceſſation of pain and fever; coldneſs of the face and limbs, and the black vomitings, or black ſtools; conſtant ſingultus, coma, and hemorrhagy; a ſenſe of great weight and ſtricture about the epigaſtric region; deep and frequent ſighing; and great failure of ſtrength denoted danger in every ſtage. When in this ſtage deep coma took place, it generally denoted a ſpeedy diſſolution.

OF THE

METHOD

OF

CURE.

FROM the preceding account of the various forms in which the *ſynochus icteroides* appeared, the reader will at once perceive, that no one mode of treatment could be with propriety purſued; but that it was requiſite to vary it, as the ſymptoms indicated an inflammatory or putrid type, as well as to adjuſt it to the ſeveral ſtages of the diſeaſe. But in all caſes which began with inflammatory ſymptoms, whether they ended in thoſe which indicated putridity or not, the following treatment was found moſt certain and ſucceſsful. Blood-letting

ting generally afforded relief in all cafes, when the activity of the arterial fyftem was evident; and the head and epigaftrium were at the fame time much affected: and this operation was found ferviceable when repeated every fix or eight hours, for the firft twenty-four or thirty-fix hours after the eftablifhment of the paroxyfm; and in every fubfequent exacerbation fo long as thofe fymptoms continued in any confiderable degree *. To thofe who condemn bleeding under fuch circumftances, we may fay with Sydenham, when fpeaking of the plague, "they either did not bleed early enough, or too fparingly." To thofe accuftomed to fee frequent cafes of idiopathic gaftritis, where the danger is feldom indicated fully by the pulfe, the propriety of this practice will be at once obvious. In conjunction with

* The firft blood drawn in the fever feldom fhewed any white glutinous covering or fize, but after the fecond bleeding, this appearance was feldom abfent; though it was never thick or very tough. The craffamentum was bulky, flat, and fmooth, and never rofe into that cup-like or fand-box form which is common in cafes of pneumonic inflammation.

with blood-letting, mercurial purges were found more certain in their effects and more ſerviceable than any other kind; eſpecially when exhibited in doſes of from ſix to twelve grains, and repeated every ſix or eight hours till a copious diſcharge by ſtool took place; and more eſpecially when their operation was promoted by mild laxative enemas, adminiſtered three or four hours after each doſe of the mercurial purge. Thoſe who have not had an opportunity of obſerving the good effects of this practice, will perhaps think it a very hazardous one. But when they conſider the difficulty of retaining the ſaline and leſs active purges on the ſtomach, and the very great difficulty of procuring copious evacuations by ſtool, without which the topical affection which obſtructs the paſſage of the bile could not be removed, nor the propenſity to puke relieved; they will change their ſentiments; for, notwithſtanding the inflamed and irritable ſtate of thoſe parts, calomel in large doſes, paſſed the pybones, and occaſioned

ed leſs irritation till it had reached the inteſtines, and was leſs liable to be caſt up than any other purgative.

But, however preconceived theories might influence others, we who were not prejudiced in favour of any particular hypotheſis, and who had daily opportunities of ſeeing its effects, not only in our own practice, but in that of others, are convinced that it was more certain in its operation, and in general as ſafe as any other.

In a few perſons of delicate or infirm conſtitutions, indeed it proved injurious; and particularly when adminiſtered after the inflammatory ſymptoms had ſubſided. When it proved injurious before the inflammatory ſymptoms were removed, it appeared to have induced an inflammation in the inteſtines, and a very painful and troubleſome teneſmus. And when it proved injurious in a later ſtage, it was in conſequence of the debility occaſioned

ed by its operation or the ptyaliſm, which too frequently ſucceeded the too frequent and injudicious exhibition of it. Unleſs ſpeedy and decided meaſures are taken in this ſtage of the diſeaſe, all our future endeavours to remove it, will generally be ineffectual. And ſurely, in a diſeaſe which had foiled every method formerly employed, ſome innovation was juſtifiable. Theſe caſes, however, were very rare in compariſon with thoſe wherein it operated gently, and to good effect. As we never adminiſtered it when putrid ſymptoms were prevalent or the debility very great, or in any ſtage of the diſeaſe, but the firſt; we cannot ſpeak with any certainty of its effects, under any other circumſtance or period.

We ſeldom had occaſion, even in the firſt ſtage of the diſeaſe, when inflammatory ſymptoms were prevalent, to exhibit mercurial purges after copious evacuations were procured, but found thoſe of a milder kind, ſuch as ſal. cath. crem. tart. or caſtor oil, generally ſufficient

ſufficient to keep the bowels in a laxative ſtate, when the ſtomach would bear them, and when it would not, gliſters made of an infuſion of ſenæ leaves, manna and common ſalt, with the addition of a little oil, generally anſwered the purpoſe. We found the moſt difficult part in the treatment, conſiſted in putting the ſtomach in a condition to retain any thing; the ſaline draught in the act of effervescence, ſo uſeful for that purpoſe in other fevers, ſeldom produced any permanent effect in this; magneſia taken in a draught of ſweetened water, ſeemed to have a better effect when immediately followed by a draught of acid beverage; but there was nothing ſo certain as a copious diarrhœa when it could be procured.* When on the firſt or ſecond day of the

* If in any caſe, the patient recovered by the means recommended by the Weſt India writers, and adopted by ſeveral, particularly by the French phyſicians who practiſed here during the prevalence of the diſeaſe, this fortunate even appears to have been more owing to a favourable ſtate of the conſtitution, or to a lower degree of the diſeaſe, than to the efficacy of their feeble and imperfect method of treatment.

the diſeaſe the face was greatly flushed, the veſſels of the tunica adnata very red and turgid, and the patient was affected with ferocious delirium, reſembling that which occurs in phrenitis, he generally died in a ſhort time, unleſs immediately and copiouſly blooded, purged and reſtricted to a cooling and abſtemious regimen.

The antiphlogiſtic regimen was always found to agree better than that of the vinous or cordial kind; not only while the pulſe continued full and active, but when it was low and quick, previous to the acceſſion of typhous ſymptoms. The patient was accordingly directed to drink toaſt and water, lemonade, tamarind-water, barley-water, and any other diluting, mild, ſedative drink, that was grateful to the palate, and reſted eaſieſt on the ſtomach.

Freſh air was conſtantly admitted into the ſick room, and cold vinegar and water frequently

quently ſprinkled upon the floor. This was found much more refreſhing than flaſhing gun-powder, or burning nitre and charcoal in the chamber; as theſe latter, though they furniſh a quantity of pure air, always increaſed its heat; and thereby counterbalanced the good effects that might otherwiſe have been derived from them. The bed and body-linen were alſo directed to be changed every day, or every ſecond day at fartheſt.

When a repetition of blood-letting during the firſt and ſecond day of the complaint, did not remove the pain in the head and back, and the diſtreſs at the ſtomach, and when every thing was vomited up as ſoon as taken; recourſe was immediately had to purging clyſters, and to the application of epiſpaſtics to the ſtomach and legs, or to the back and inſide of the thighs: the latter method is preferred by Dr Hume of Jamaica, to any other; from a ſuppoſition, that an inflammation raiſed on an inferior part, always relieves that

ſubſiſt-

ſubſiſting in a ſuperior one. At preſent it is ſuppoſed to be owing to a change of action, from one part of the ſyſtem to another.

Opium was alſo frequently employed in a ſolid form as directed by Hillary of Barbadoes, with a view of relieving the vomiting; but in general was found to aggravate it. The ſaline draught given in the act of effervescence, or magneſia as already mentioned, had a better effect, but was by no means certain: nor in fact was any thing elſe found to have any permanent effect on this ſymptom, except glyſters, briſk purges, and bliſters. But theſe when judiciouſly and early applied ſeldom failed of affording relief.

Baths of various kinds were occaſionally employed, but ſeldom with ſuch manifeſt effect as to induce us to ſay much in their favour, except waſhing the limbs with ſimple water of tepid warmth, to keep the ſkin ſoft, and take off ſtricture and reſiſtance from the

ſurface.

ſurface. When the topical affection of the ſtomach was relieved, a ſolution of Rochelle ſalts, in thin veal or fowl broth, with the addition of a little common marine ſalt, was in general more certain and leſs irritating than any other laxative. (A drachm of this ſalt requires about two ounces of boiling water to diſſolve it perfectly.) The inflamed ſtate of the ſtomach deterred us from employing emetics, or any antimonial preparations: but from the trials of others, we are convinced that they ſeldom were of ſervice, but often the reverſe. When purges produced copious, fœtid and bilious ſtools early in the diſeaſe, it generally terminated favourably and ſpeedily.

In the ſecond ſtage of this fever, (which however, ſeldom took place when the remedies beforementioned were early and judiciouſly employed and duly perſiſted in), we found a very different treatment proper, from that which was neceſſary in the firſt ſtage; for the inflammatory ſtate now, for the moſt

part, rapidly verged towards gangrene; and the muſcular weakneſs was ſuch as to render bleeding inadmiſſible; and the irritable ſtate of the ſtomach precluded all expectation from purgatives, as they were rejected as well as every thing elſe the inſtant they reached the ſtomach. Our only reſource, therefore, was in warm antiſeptic fomentations, applied by means of flannel cloths to the ſtomach, thighs, legs and hands, ſinapiſms to the feet, aromatic and eſſential oils, or ſpices ſtewed in brandy to the ſtomach; or the application of bliſters, and the frequent exhibition of laxative gliſters; and after a free evacution, the injection of bark decoction, and a few drops of laudanum, with ſome farinaceous or mucilaginous liquor, into the inteſtines—(here perhaps, waſhing the patient's whole body with cold water, and afterwards wrapping it in a blanket wrung out of a hot decoction, and the ſubſequent application of bliſters, would have been beneficial; but we were afraid to try them). Vinous and cordial drinks as well

well as all kinds of aliment, invariably aggravated this ſymptom, and encreaſed or produced the cardialgia; but ſmall draughts of cold water generally gave inſtant eaſe. When by theſe means the topical inflammation of the epigaſtric region was removed, all the ſymptoms gradually ſubſided, and the patient recovered. But when theſe means failed, and the black vomiting came on, accompanied with coldneſs, and a cadaverous appearance of the extremities, and a dark yellow and purple aſpect of the countenance, our practice was to employ a ſtrong decoction of peruvian bark—an infuſion of camomile flowers, and toaſt and water lightly acidulated with the elixir of vitriol, and in ſome caſes a mixture of brandy and water—and to direct gliſters compoſed of a ſtrong decoction of bark, with the addition of fifteen or twenty drops of laudanum, to be adminiſtered every two or three hours; applying at the ſame time, ſinapiſms and jugs of hot water, to different parts of the patient's body. We alſo directed all the

drinks to be given in a tepid ſtate. Hot ſpiced wine, wine and water, and various other liquors were often tried, but in general with ſuch bad ſucceſs, that we cannot recommend them in ſuch circumſtances. Hot brandy toddy, however, with the addition of a large quantity of powdered nutmeg, in conjunction with external heat and acrid ſtimulating applications, often had evident good effects.

When indeed the diſeaſe began with great proſtration of ſtrength, and other ſymptoms which denote a typhous diatheſis, we found wine not only ſafe, but more uſeful than any other article. In theſe caſes alſo, the early uſe of the bark in various forms, together with the liberal uſe of laudanum and volatile ſalts were of ſervice ; but that which was moſt particularly ſo, was the ſhower-bath of ſalt-water, applied quite cold three times aday, the patient ſitting in an arm chair, in a large tub for the purpoſe, his head being previouſly ſhaved or covered with a thin bathing cap of oiled cloth.

But

But after the acceſſion of this ſtage, in which the black vomiting and coldneſs of the limbs were the moſt predominant ſymptoms, all attempts to relieve were generally ineffectual.* When

* The principal aim to be kept in view in this ſtate of the diſeaſe, is to recal and ſupport the determination of the fluids to the ſurface. Death may be prevented, even after black-vomiting has appeared with all its terrors, if a remedy can be found powerful enough to excite the action of the extreme veſſels, and to recal the determination from the internal parts, to the ſurface of the body. For this purpoſe, we are told by Dr Jackſon, that he has employed alternately warm and cold bathing with ſucceſs: he has even wrapped the body in a blanket, ſoaked in water, in which a large portion of ſalt was diſſolved; or which had been ſteeped in hot brandy or rum; enjoining at the ſame time the liberal uſe of wine or any other grateful cordial, to be taken as warm as poſſible in ſmall and repeated draughts. He alſo mentions having heard of ſeveral well-atteſted inſtances of perſons being relieved of the black vomiting and their lives ſaved, by plentiful draughts of rum and water. In other caſes he thinks waſhing the whole body firſt with cold water, and then wrapping it in the blankets ſteeped in hot brandy or rum, and giving warm cordial drinks anſwered ſtill better. (See his Treatiſe, p. 226.) We found brandy and water and beef-tea reſted better on many ſtomachs, and ſtrengthened them more than any thing elſe, after the removal of fever and pain, and all the other ſymptoms except debility and dyſpepſia.

When the diſeaſe did not appear to be confined more particularly to any one part of the ſyſtem than another, but was univerſally diffuſed; and when nervous ſymptoms with great proſtration of ſtrength, were conſpicuouſly predominant, which was frequently the caſe during the greateſt part of the month of Auguſt, the treatment recommended by Dr Edward Stephens, a phyſician of great repute at St Croix, was employed with more ſucceſs than any other; of which the following is an abſtract. "The nauſea and vomiting may be relieved by an infuſion of camomile flowers, given frequently until the ſtomach is ſufficiently emptied of all crude matters. Small doſes of a cordial mixture compoſed of the oil of peppermint and compound ſpirits of lavender, may then be taken until the ſickneſs abates. If notwithſtanding, the irritability of the ſtomach ſhould continue, recourſe muſt be inſtantly had to the cold bath, which muſt be uſed every two hours or oftener if the urgency of the ſymptoms ſhould require it: after each

each immerſion a glaſs of old Madeira or a little brandy burnt with cinnamon may be adminiſtered.

Flannel cloths wrung out of ſpirit of wine, impregnated with ſpices, may be applied to the pit of the ſtomach and changed frequently. An injection containing an ounce of powdered bark, mixed with thin ſalep or ſago, to which a tea-ſpoon-full of laudanum has been added, ſhould be adminiſtered. Theſe injections may be continued every two or three hours, omitting the laudanum after the firſt—as ſoon as the ſtomach can bear medicines and nouriſhment, the bark may be adminiſtered in ſmall doſes—and as much madeira wine may be given as the patient can bear, without affecting his head or heating him too much. All emetics and violent cathartics ſhould be avoided. If the bowels ſhould not be ſufficiently open, a laxative clyſter may be neceſſary, or a few grains of powdered rhubarb added to each doſe of bark, until the deſired effect is produced.

produced. If diarrhœa ſhould prevail, it muſt be checked by ſtarch injections, blended with laudanum, by the tincture E. kino, Japonica, or a decoction of caſcarilla; for a diarrhœa, eſpecially when profuſe, is always injurious when the diſeaſe is in an advanced ſtage, or when the debility is great.

If ſtupor, coma, or delirium ſhould come on, a large bliſter ſhould be applied between the ſhoulders, ſmall ones to the thighs, and ſtimulating cataplaſms to the ſoles of the feet. When hemorrhages appear, the elixir of vitriol may be joined with the bark, but great care ſhould be taken to prevent it from affecting the bowels.

If the pulſe ſhould be much ſunk, the proſtration of ſtrength great, and ſubſultus tendinum take place, ſmall doſes of the liquor mineralis Hoffmanni, or even vitriolic æther, diluted with water may be given. Muſk and camphor in this ſituation, have alſo proved effectual.

effectual. Upon the whole this outline may be ſummed up under the recited circumſtances, by ſaying that the cold bath, bark and wine, a ſpacious well ventilated room, frequent change of bed and body linen, and attention to reſt, and quiet if properly perſevered, is all that can be done with any proſpect of ſucceſs."

We were led with other phyſicians of this city, to make trial of mercurial purges in the early ſtage of this diſeaſe, from having obſerved their good effects in bilious remittents, when ſymptoms of accumulated bile were preſent; and are ſurprized that the Weſt India practitioners never made trial of it in a diſeaſe, which the generality of them acknowledge is the moſt deſperate and mortal to which mankind are liable, and which has heretofore baffled all their ſkill; eſpecially as ſome of them imagine it to be only a higher grade of the bilious remittent, of tropical climates; and as mercurial cathartics are recommended occaſionally

caſionally for the removal of bilious accumulations, by ſeveral modern authors, particularly by Balfour, Blane and Clark. Dr. Williams indeed, (who publiſhed a treatiſe on the yellow fever at Jamaica in 1750), though he makes no mention of mercury, ſays he found jallap or ſcammony in doſes of 20 or 30 grains, given after an antiemetic draught, and repeated as often as it was thrown up till it operated freely by ſtool, more effectual, not only in relieving the inceſſant propenſity to puke at the beginning of the diſeaſe, but in mitigating every painful and febrile ſymptom, and adds that though he can adduce no modern authority in ſupport of his practice, he can recommend it from his own experience. We can ſay the ſame of mercurial purges, with this addition, that when they operated copiouſly, which was generally the caſe when a laxative glyſter was injected, a few hours after them, the vomiting or the propenſity thereto became more moderate, and in many caſes was entirely removed.

With

With reſpect to blood-letting, there is much contrariety of ſentiment among the Weſt India phyſicians; the generality of them reſtraining the operation to the firſt and ſecond days, from the commencement of the diſeaſe, and to a very ſparing quantity: whereas Dr Moſely adviſes it without limitation, even ad deliquium, and a repetition ſo long as the pulſe continues preternaturally quick, and the ſkin exhibits much feveriſh heat. And Williams adviſes opening the temporal artery, when the pain in the head is great, and the fever high. But though Moſely is of the ſame opinion with Williams, with reſpect to purging for relieving the irritability of the ſtomach, ſo long as the feveriſh heat is evident, without regarding the ſtate of the pulſe, he makes no mention of mercurial purges, but places his chief dependence on a ſolution of vitriolated tartar and emollient glyſters; and as ſoon as that is accompliſhed, has immediate recourſe to the bark in various forms, as may be moſt grateful to the ſtomach.

Blane

Blane and Jackſon have given a more accurate deſcription of the diſeaſe, but Moſely certainly underſtood its nature and treatment better than either, though he may perhaps ſometimes have carried his plan too far for the conſtitutions of the generality of citizens. For hardy athletic mariners we believe it was the beſt mode of treatment that was known at the time he practiſed in Jamaica.

OBSERVA-

OBSERVATIONS

ON THE

ORIGIN AND NATURE

OF THE

CONTAGION.

THERE is no diſeaſe on which the influence of climate and ſeaſon is ſo conſpicuous as on the yellow fever.

In the iſlands and countries within the tropics, where the diſeaſe is generated, the phyſicians who practice in thoſe parts have no idea of its being contagious; but becauſe it rarely attacks the natives of that climate, and is confined to foreigners from a colder climate, they aſcribe

aſcribe it to the effects of fatigue and heat, expoſure to night air, or to ſome irregularity, &c. Numerous obſervations however prove, that it is highly contagious when conveyed to other countries, eſpecially in populous cities with cloſe built ſtreets, when the heat of the weather is equal to, or exceeds that of, tropical climates. For examples of this, the reader is referred to Lind on Hot Climates; to Lining's account of its ſeveral occurrences at Charleſton, publiſhed in the 2d volume of the Phyſical and Literary Eſſays of Edinburgh; and to the hiſtory of its riſe and progreſs as it lately appeared in Philadelphia, publiſhed by Mr Carey. Former obſervations alſo ſhew, that the contagion has always been ſo effectually deſtroyed by cold and froſty weather, that it has never been known to revive the following ſpring or ſummer.

As the contagious miaſmata, or deleterious corpuſcles of this contagion, or whatever elſe it may be ſuppoſed to conſiſt of, is neither viſible nor can be rendered cognizable to the

ſenſes by any means hitherto invented, we can only determine its exiſtence and judge of its nature from its effects. And as the ſource from whence it is derived, and the means by which it is generated, have never been inveſtigated or even ſuſpected as we know of, we can only form a judgment of that circumſtance from analogy, which at beſt is but a problematical guide.

The yellow fever, though it agrees with the typhus, jail or hoſpital fever, and the peſtilence in being capable of affecting ſound perſons under certain circumſtances, who happen to approach within a certain diſtance of its ſource, or of ſubſtances which have already been within that diſtance, and imbibed the contagious effluvia, differs materially from the former, in not being capable of producing any morbid effect in cold and froſty weather, unleſs the heat of the chamber where it may chance to lurk, be raiſed and continued for ſome hours above fifty or ſixty degrees, or according

cording to the learned and obſerving Blane, 75 degrees—and from the latter in not loſing its power, and declining as the heats of ſummer, in countries where they are very hot come to their height, as well as by the cold of winter—and from both in the manner of its attack, and the appearance of the ſymptoms in the progreſs of the diſeaſe. And though it reſembles the influenza in the ſuddenneſs of attack, it differs from it materially in the facility of communication, the rapidity of its progreſs, and the extenſiveneſs of its ſway—the one being confined to cities, and taking ſome months to finiſh its progreſs—the other ſpreading over whole continents, in the courſe of as many weeks.

Nor does it agree in its effects with the miaſmata, which ariſe from putrefying ſubſtances, or from a marſhy ſoil in any one circumſtance, except being extinguiſhed by cold and froſty, and perhaps rainy weather.* For the miaſmata

* See remarks on this ſubject, publiſhed in the Federal Gazette

miaſmata of marſhes, are diffuſed through the atmoſphere to a conſiderable diſtance from their ſource, and affect numbers at the ſame time, and the diſeaſes produced thereby, are not contagious; whereas the miaſmata which occaſion the yellow fever, are confined to a very narrow ſphere, and only affect thoſe that happen to come within that ſphere, or in contact with, or near to ſuch perſons, or ſuch ſubſtances as have been within that ſphere, ſo as to receive the contagious effluvia; and the diſeaſe produced by theſe miaſmata is contagious, and propagated in ſucceſſion from one to another, in proportion as there is more or leſs intercourſe between the ſound and the ſick, provided a ſtate of the atmoſphere, with reſpect to heat and ſome other circumſtances, exiſt at the ſame time favourable for propagating the contagion. What theſe circumſtances are, will be mentioned in the ſequel. But if this diſeaſe is neither a modification of the

Gazette, dated November 18th, and Dunlap's American Advertiſer, December 20th, 1793.

peſtilence—the typhus—the influenza—or a higher grade of the bilious remittent fever.—What is it? From what ſource does it originate, or by what means is it generated? That it originates within the tropics, and ſeldom if ever in any other climate is generally admitted—but from what ſource or how generated, is the queſtion.

It is well known to every one converſant with medical ſubjects, that other contagious miaſmata are frequently generated in cloſe crowded or unventilated places, particularly in jails, hoſpitals and ſhips of war, unleſs the body and bed clothes are frequently changed and kept clean, and the air frequently renewed, in conſequence of the effluvia conſtantly iſſuing from the lungs and pores of the ſkin, at the ſame time that a portion of the pure and vivifying principle of the air, is gradually exhauſted by the ſame circumſtance. It is alſo a fact well eſtabliſhed, that perſons thus circumſtanced, frequently communicate

municate a diſeaſe to thoſe who chance to come into the ſame place, or in contact with ſuch ſubſtances as have been within a certain diſtance of them, ſo as to imbibe a quantity of the effluvia iſſuing from them, eſpecially when rendered volatile by heat, without being in any apparent degree affected in their health themſelves.*

May not the contagion of the yellow fever therefore be generated in the dirty, confined, and ſuffocating cabins of the unfortunate ſlaves, (who are deprived of the means as well as the reliſh for cleanlineſs and agreeable appearance, which actuates the minds of independent freemen), exalted into a peſtilential quality by long continued heat; and may not the conſtitutions of the inhabitants from the ſame cauſe, in conjunction with the purity of the air from conſtant ventilation, be rendered incapable of

 being

* For examples of this the reader is requeſted to conſult the works of Pringle, Lind and Blane, writers deſervedly of the higheſt authority in medicine.

being affected by it; while ſtrangers, whoſe conſtitutions are differently diſpoſed, ſeldom eſcape?

The putrefaction of dead animal matter can, have no ſhare in generating the diſeaſe, as it gives out nothing but a little hydrogen or inflammable air different from vegetable ſubſtances in that proceſs.

To ſuppoſe with Drs Warren and Deſportes that the contagion by which the diſeaſe is produced and propagated, was firſt introduced into the Iſlands by a crew of ſick perſons that arrived there about the year 1730, from Siam in the Eaſt Indies; and that it has been foſtered there ever ſince, as the ſmall pox has been in other countries, would have ſome appearance of plauſibility, if like that diſeaſe it made no diſtinction between natives and foreigners; and a greater or leſs number of the inhabitants were always affected by it: but as that is not the caſe, ſuch an opinion muſt be

ground-

groundleſs. For inſtead of affecting the natives, it is almoſt entirely confined to mariners from long voyages, and foul and crowded ſhips; and to ſoldiers confined in hoſpitals, or crowded together in huts or barracks. And when it happens to be conveyed to other countries, its influence is entirely exerted upon the inhabitants of cities; and is obſerved to be moſt contagious in thoſe parts where the air is moſt confined and impure—when the days are very hot and the nights cool. Hence it appears, that in order to give effect to the contagion of this fever, it is neceſſary that there ſhould be a certain conſtitution of the air, in conjunction with great heat.

Let us therefore enquire into the circumſtances which give this morbific conſtitution to the atmoſphere, that if the contagion ſhould ever be introduced here again, we may not only eſcape its effects by retreating into the country, but if poſſible, diſarm it of its power, and prevent it from ſpreading, and affecting thoſe who remain in the city.

That

That all contagious diſeaſes receive their full force from a particular conſtitution or condition of the atmoſphere, appears certain, from a multiplicity of concurring obſervations made by different authors at different periods and in different countries. In what this particular conſtitution of the atmoſphere conſiſts, which in one year and in the ſame ſituation favours the ſpreading of contagion, and in another year in the ſame ſeaſon and in the ſame place, checks or extinguiſhes it, has been variouſly explained by different writers: but as no explanation hitherto attempted is perfectly ſatisfactory, we beg leave to offer one which we think leſs exceptionable.*

During a long continuance of dry and hot weather, the atmoſphere becomes more or leſs charged with exhalations from various ſources, in proportion to the moiſture of the ſoil, &c. which are more or leſs injurious to health, in

* See on this ſubject particularly the works of Sydenham, Ruſſel, and Lind.

in proportion to the quantity of animal and vegetable ſubſtances in a ſtate of putrefaction, which cover or are mixed with the ſoil, the reſpiration of animals, the combuſtion of fuel, &c. while it is at the ſame time robbed by theſe proceſſes of a conſiderable portion of its vivifying principle, at preſent known by the name of oxygen gas, or pure air.. It is certain that the air is ſaturated by ſome other ſubſtance, or deprived of a portion of its vivifying principle by ſome means or other ; otherwiſe we know from the moſt unqueſtionable obſervations, that it would always neutralize, correct, diſſipate, or precipitate the matter of contagion, however minute and ſubtle the corpuſcles may be of which it conſiſts. For it is well known that no contagious diſeaſe can ſpread, or become epidemic, on mountains, or on open and extenſive plains, where the ſoil is dry, cleared, and cultivated ; whereas it is with difficulty it can be prevented in populous cities, with cloſe built ſtreets and narrow alleys, or in low champaign countries, where ventilation is obſtructed by ſurrounding woods.

In

In populous cities in ſultry weather the exhalations, from the vaults, privies, ſinks, ſewers, gutters, ſhambles, ſlaughter-houſes, tanyards, from reſpiration, and the combuſtion of fuel, and a variety of other proceſſes of nature and art, are inconceivably great. Nor can ſuch exhalations fail of filling the air with a noxious maſs of inviſible corpuſcles; at the ſame time that the proceſs by which they are generated ſpoliates the ſame atmoſphere of a principle, on the preſence of which, both life and flame depend for their continuance.

———————"It is not air
That from a thouſand lungs reeks back to thine,
Sated with exhalations rank and fell,
The ſpoil of dunghills, and the putrid thaw
Of nature; when from ſhape and texture, ſhe
Relapſes into fighting elements:
It is not air, but floats a nauſeous maſs
Of all obſcene, corrupt, offenſive things;
Which ſtill ranker grows with ſickly reſt,
And poiſons the balſamic blood."

Armstrong on Health.

MEANS

MEANS

FOR PREVENTING THE INTRODUCTION OF

CONTAGION

INTO

SEA-PORT TOWNS.

THE moſt effectual means of preventing the introduction of contagious diſeaſes into any ſea-port town, is to erect at a convenient diſtance therefrom, four ſeparate hoſpitals, with large airy apartments. One of theſe hoſpitals to be appropriated for perſons with dubious ſymptoms. A ſecond for perſons manifeſtly infected. A third for convaleſcents from the diſeaſe. A fourth for purifying the body, the wearing apparel, and bed clothes: this

this laſt ſhould be provided with bathing tubs, and materials for fumigating. A bathing chamber and freſh clean apparel ſhould alſo be provided near to each hoſpital, for each patient, before his admiſſion into either; except his weakneſs or fever ſhould make the bath hazardous. Each apartment ſhould be ſeparated by means of a partition, to prevent any effect from each other; and ſhould have windows that will both ſlide up and down, for the admiſſion of freſh, and expulſion of foul air. (For the manner of conſtructing theſe, ſee Mackiterick's Medical cautions.)

Theſe hoſpitals ſhould be at ſome diſtance from each other, on as elevated and dry a ſituation as can be conveniently found. When a ſuſpected ſhip arrives, the whole crew ſhould be compelled by law to perform quarantine for 14 days at leaſt; the ſound to remain on board; the ſick or indiſpoſed in a marine hoſpital or infirmary. By this it would be aſcertained with certainty, whether there was contagion on board or not.

MEANS

MEANS

FOR PREVENTING THE SPREADING OF

CONTAGIOUS DISEASES,

WHEN THEY HAPPEN TO BE INTRODUCED INTO A

CITY.

WHEN a contagious diſeaſe breaks out in a city, the moſt certain means of preventing it from becoming epidemic, or from ſpreading, is to prohibit all intercourſe between the ſound and the infected; and to commit the diſeaſed to the care of perſons commiſſioned for that purpoſe. As ſoon therefore, as the diſeaſe appears in any family, both the ſound and the ſick ſhould be immediately ſeparated and removed to other apartments, at ſome diſtance from the town, and

and a conſiderable diſtance from each other, and the houſe where the diſeaſe appeared ſhould immediately be purified by the means hereafter directed.

Infirmaries for this purpoſe ſhould be built at the public expence, on dry and elevated ſituations, particularly on the high and gravelly banks of rivers or conſtant ſtreams of water, open on all ſides to the free acceſs of the air, provided with every neceſſary, and ſupported at the public expence. But perſons in affluent circumſtances though compelled to leave the city, ſhould be allowed to retire to private infirmaries at their own expence, provided they conformed to the rules of the public infirmaries, in every other reſpect.

Every family in the neighbourhood where the infection prevailed, ſhould alſo be obliged under a heavy penalty, to remove to another part till all danger from contagion be over; and no perſon be permitted to return to an infected

infected houſe, or to uſe any article where the contagion exiſted, till purified by the means hereafter directed. Nor ſhould any perſon who has recovered from the diſeaſe be permitted to return to the city, or to his own houſe, till he has after ſuch recovery, repeatedly undergone the ablution of both the warm and cold bath, changed every article of his cloathing, and performed a quarantine of at leaſt 14 days, ſo as to render his return perfectly ſafe to the community.

If proper attention had been paid to theſe directions, which have been collected from the moſt reſpectable ſources; and the ſubſtance of which was earneſtly adviſed by the college of phyſicians, the calamity by which all deſcriptions in this city ſo lately ſuffered, would have been prevented. And that a ſtrict and punctual obſervance thereof in future, will prevent the like calamity, we are as certain as we are of any axiom in natural philoſophy.

In a letter from Dr Waterhouſe, the preſent reſpectable profeſſor of the theory and practice of medicine in the univerſity of Cambridge, Maſſachuſetts, dated September 28th, 1778, we find the following information reſpecting the means which have been found effectual for preventing the ſmall pox from ſpreading among the inhabitants of Newport, the capital of Rhode-Iſland, when it happened to be introduced there, by means of any veſſel; and will apply equally well in preventing any other contagious diſeaſe from becoming epidemic.

"When a veſſel arrives in the harbour with the ſmall pox on board, every perſon with the diſeaſe is immediately taken by officers appointed for the purpoſe, to Coaſter's harbour, a little iſland about three miles from Newport, where there is an hoſpital and every neceſſary provided for their reception and accomodation. And the veſſel having a jack hoiſted in her ſhrouds, is obliged to perform quarantine.

"None

" None of the bedding or wearing apparel made uſe of by the patients during their ſtay at the hoſpital, are permitted to be brought away; nor are the patients who recover from the diſeaſe, allowed to leave the hoſpital, till they have undergone ſeveral ablutions in warm water, and till at leaſt one week has elapſed after their recovery, let the diſeaſe be ever ſo light.

" When any perſon in the town is ſuſpected of having taken the infection, the family is obliged, under a heavy penalty, to give immediate notice to one or more inſpectors. If theſe, in conjunction with a phyſician, pronounce the diſeaſe to be the ſmall pox, the family has little more to do with the patient; but he is from that time to the termination of the diſeaſe, wholly under the direction of theſe officers, who remove him to Coaſter's harbour. Formerly they carried the ſick perſon on a ſleigh in a box in form of a large cheſt, with a ſmall bed in it; the cover of which was perforated with holes ſufficient to ſupply the patient

tient with air. But the inhabitants perceiving that this formidable apparatus had all ill effect on timorous minds, discontinued the box, and substituted a sedan chair. It has happened more than once, that the disease was so far advanced before it was known to be the small pox, that the patient could not be removed without the greatest hazard. In that case the street was boarded up; an advertisement published in the news-papers, and guards placed to prevent any person from approaching within a certain distance of the house."

MEANS

FOR DESTROYING

CONTAGION.

HEAT, fumigation and lime-washing appear to be the most effectual means of destroying the contagion adhering to the walls, floors, and

and furniture of houſes, and to bedding, wearing apparel, and to other materials which have been expoſed to it.

For this purpoſe the bedding and wearing apparel being hung on lines acroſs the room, iron pots placed on bricks in the centre, and at each corner of the chamber or apartment ſhould be nearly filled with alternate layers of powdered ſulphur or nitre, and charcoal; and a piece of oakum dipt in tar, to ſerve as a match, being placed in each pot, the fire-place being previouſly cloſed, and the windows ſhut down, is to be ſet on fire, and then the door to be ſhut; obſerving to let in freſh air occaſionally, and to relight them when extinguiſhed; but cautiouſly avoiding going in till the door and windows have been for ſome time opened to prevent ſuffocation.

When this proceſs has been continued for three or four days, the door, windows, and chimney are to be opened, and left open day and

night for at leaſt a fortnight. By this time every particle of contagion will be perfectly extinguiſhed, eſpecially if the air of the room had been greatly heated immediately before the admiſſion of freſh air: for by great heat it is attenuated and diſſipated, and by cooler and pure air entirely changed in its nature and qualities, if there is any faith to be put in the experiments of the committee of phyſicians appointed by the empreſs of Ruſſia, to ſuperintend the hoſpitals, when a peſtilential fever prevailed at Moſcow in the year 1771, related by Mertens in his medical hiſtory of that diſeaſe: or if the obſervations of the experienced Lind, and the intelligent Ruſſel, are to be credited.

For greater ſecurity, the walls of the houſe where infected perſons have lain, ſhould always be white-waſhed with lime, and a quantity of the ſame article ſhould be thrown into the privies, as it is a certain corrector of contagion and putrefaction, as well as deſtructive to every ſpecies of animalcule.

APPENDIX.

Copy of the report of the College of Phyſicians, in anſwer to the Governor's enquiries, reſpecting the origin of the late epidemic; and their directions for extinguiſhing latent infection.

SIR,

IT has not been from a want of reſpect to yourſelf, nor from inattention to the ſubject, that your letter of the 30th ult. was not ſooner anſwered; but the importance of the queſtions propoſed, has made it neceſſary for us to devote a conſiderable portion of time and attention to the ſubject, in order to arrive at a ſafe and juſt concluſion.

No inſtance has ever occurred of the diſeaſe, called the *Yellow Fever*, having been generated in this city, or in any other part of the United States, as far as we know; but there have been frequent inſtances of its having been imported, not only into this, but into

into other parts of North America, and prevailing there for a certain period of time; and from the riſe, progreſs, and nature of the malignant fever, which began to prevail here about the beginning of laſt Auguſt, and extended itſelf gradually over a great part of the city; we are of opinion that this diſeaſe was imported into Philadelphia, by ſome of the veſſels which arrived in the port after the middle of July. This opinion we are further confirmed in, by the various accounts we have received from unqueſtionable authorities.

TO PURIFY THE CITY FROM LATENT INFECTION,

WE beg leave to recommend, that every houſe, particularly thoſe in which there have been any ſick, ſhould be thoroughly cleanſed and kept open for ſome weeks, ſo as to admit freſh air through every aperture. The walls ſhould be white-waſhed, and gun-powder burned in all the apartments. The beds

and

and woollen apparel of the infected, ſhould either be deſtroyed or ſmoaked with gun-powder in a cloſe room, and afterwards expoſed to the open air and rain. Unſlaked lime ſhould be thrown down the neceſſaries; the ſtreets ſhould alſo be kept clean, eſpecially in the confined parts of the city.

In anſwer to your laſt queſtion, permit us to obſerve, that we truſt the early attention of the legiſlature will be directed to the port, with reſpect to the officers and other neceſſary arrangements, and on ſuch an occaſion the College will ever cheerfully co-operate with them, in their endeavours to prevent the introduction of contagious maladies in future.

By order of the College of Phyſicians.

JOHN REDMAN, *Preſident.*

NOVEMBER 26th, 1793.